Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_

**Evidence for Evolution Short Response Question**

AP Biology, Ms. OK, 2014-2015

Fossils of lobe-finned fishes, which are ancestors of amphibians, are found in rocks that are at least 380 million

years old. Fossils of the oldest amphibian-like vertebrate animals with true legs and lungs are found in rocks that

are approximately 363 million years old.

Three samples of rocks are available that might contain fossils of a transitional species between lobe-finned

fishes and amphibians: one rock sample that is 350 million years old, one that is 370 million years old, and one

that is 390 million years old.

(a) **Select** the most appropriate sample of rocks in which to search for a transitional species between lobe-finned

fishes and amphibians. **Justify** your selection.

(b) **Describe** TWO pieces of evidence provided by fossils of a transitional species that would support a

hypothesis that amphibians evolved from lobe-finned fishes.

*Note: This question is taken from the 2013 AP Biology Exam and was released by the College Board for public viewing*



**Ms. OK’s Free Response Tips**

1. Be sure that you answer all parts of the question. If you are given a choice of two topics within a question, choose carefully and do not answer both.
2. When writing your response, label the parts of the response with “a’s, b’s, c’s, etc.”, as they are labeled in the question. Do not skip around within the question!
3. Write an essay. If you include a diagram, label it properly and make sure its relevance is explained in the text. Draw your diagram where it is mentioned in the text, not at the end of the essay.
4. Do not include broad introductory statements or conclusions. Just get to the point, and answer the question.
5. Answer the question thoroughly. No detail is too small if it is relevant. Examples are always appropriate. Be sure to include the obvious… most points are earned for the basics!
6. Define your terms. Say something about each of the terms you use. If you can’t recall a specific term, take a stab at it or simply describe the concept.
7. Readers are not looking for specific words or phrases. They are looking for a demonstration of understanding. Do not underline terms that you feel are “key words / buzz words.” It makes your response more difficult to read for the grader.
8. A typical short response question takes about 6 minutes to answer and should be answered in about 4-6 sentences.
9. A typical long response question takes about 20 minutes to answer and should be answered in about 4-6 sentences.

*Note: These tips are adapted from various sources.*

**Common Skills Assessed on AP Biology Short and Long Response Questions**

Ms. Ottolini, AP Biology

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **You Got It!** | **You’re Almost There!** | **You Need to Make Some Changes!** |
| Summarize known information. | You have stated or summarized known biology concepts accurately and thoroughly with relevant vocabulary. | You have stated or summarized known biology concepts with relevant vocabulary, but your summary may be missing one of the following elements—thoroughness or accuracy | You have stated or summarized known biology concepts, but your summary is inaccurate and may use unrelated vocabulary. |
| Make a prediction and justify it using known information. | Your prediction is logical and clearly supported by relevant known information. | Your prediction is logical but is not clearly supported by relevant known information. | Your prediction is not logical and is not clearly supported by relevant known information. |
| Propose a method to test a prediction or an improvement to a current method, and justify your choice (i.e. based on the rules of proper experimental design). | Your method includes all the important parts of an experiment that are applicable to the particular scenario (ex: control group, constants) or your proposed improvement is logical and justified based on the rules of proper experimental design. | Your method is missing some elements of a properly designed experiment or your proposed improvement is logical but is not justified. | Your method is missing most elements of a properly designed experiment or your proposed improvement is not logical or justified. |
| Create a graph from given data. | Your graph includes all elements of a properly designed graph: a descriptive title, axis labels (with units), proper axis scales, and a key (if multiple sets of data are used. | Your graph includes most elements of a properly designed graph: a descriptive title, axis labels (with units), proper axis scales, and a key (if multiple sets of data are used. | Your graph includes some or none of the elements of a properly designed graph: a descriptive title, axis labels (with units), proper axis scales, and a key (if multiple sets of data are used. |
| Use a statistical test to analyze data and explain the meaning of the test results. | Your statistical test results were correct and well summarized. The significance of these test results was clearly and accurately explained. | Your statistical test results were correct and well summarized, but the significance of these test results was not clearly and accurately explained. | Your statistical test results were incorrect, poorly summarized, and the significance of these test results was not clearly and accurately explained. |
| Make a conclusion / claim and supporting it with evidence. | You made a correct conclusion, provided relevant data to support the conclusion, and directly connected the data to the conclusion. | Either your conclusion is incorrect, you did not provide relevant data, OR you did not clearly connect the data to the conclusion. | Your conclusion is incorrect AND your data is unrelated to or poorly connected to the conclusion. |

*Note: The actual rubric used to grade your free response questions will be more specific and require the use of particular vocab terms.*